

1       **DOUBLE TUNNEL JUNCTION USING SELF-PINNED CENTER**  
2                               **FERROMAGNET**

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5                               **ABSTRACT**

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7           A double tunnel junction TMR magnetoresistive sensor having a first and second  
8   magnetic free layers separated by a self pinned magnetic layer. The self pinned magnetic  
9   layer is separated from the first and second free layers by thin barrier layers.